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CHARACTERISATION OF SLUDGE FROM STREET GULLIES

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ABSTRACT

Sludge from street gullies, emanating from stormwater, is often deposited at a landfill for non-hazardous waste. According to EU regulations the amount of waste that goes to landfills should be minimized, and one purpose with this study was to see if it might be possible to reuse the sludge in the society instead of deposit it. The sludge was collected from street gullies in Malmö Municipality (ca 250 000 inhabitants) in Southern Sweden and samples were taken from one area with low traffic (LT) intensity and one with high traffic (HT) intensity. According to the regulations the waste should be characterised and the leachability of the material should be tested. In this study two recommended EU methods for leachability testing of waste, prEN 14405 and SS-EN 12457-3 were used. A number of parameters were determined in the sludge as well as in the eluates obtained from the two leaching tests. These include pH, conductivity, DOC and inorganic ions as e.g. chloride. A number of metals as e.g. Cd, Cr, Cu, Hg, Ni and Zn, were determined by ICP- MS and organic compounds were screened by HPLC-DAD and GC-MS. It was found that the concentrations of metals and organic compounds in the sludge were several orders of magnitudes higher than the actual eluate concentrations. Our results shown that sludge from street gullies seem to be relatively harmless. All average values were clearly below the proposed limit values for non-hazardous waste, except for dissolved organic carbon (DOC) and phenol index (for inert waste) for the LT sludge. The HT sludge could be re-circulated in the society after the first dewatering step and the LT sludge could be re-circulated after a treatment step reducing concentrations of phenolic compounds and DOC.